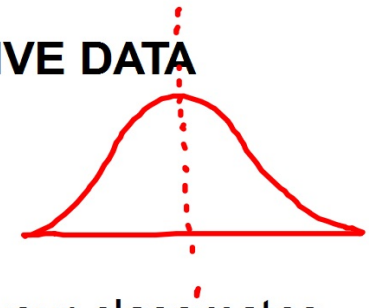
**AP STAT: CHAPTER 4- QUANTITATIVE DATA**



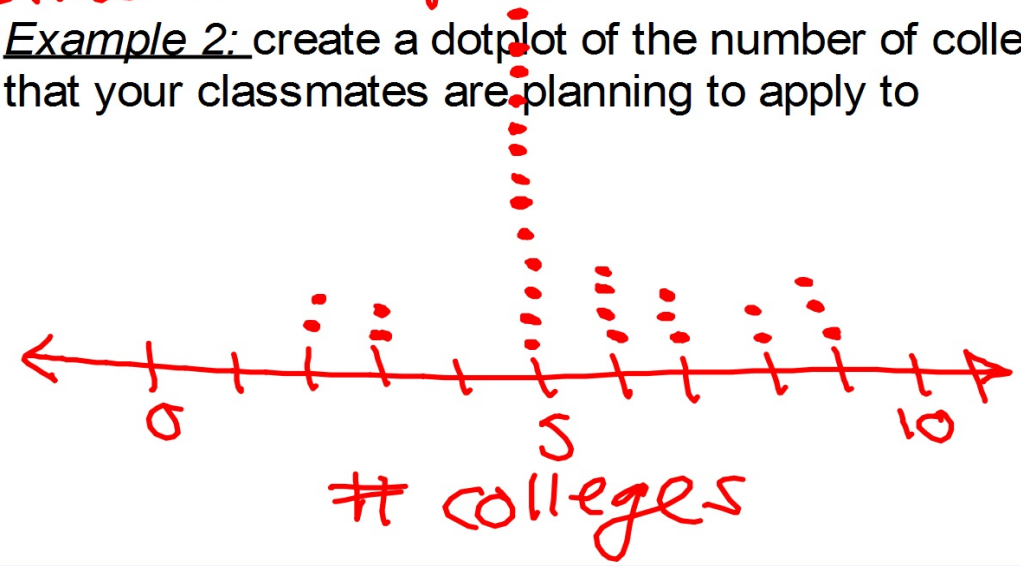
**Quantitative Distributions:**

**1. Dotplots**

*Example 1:* number of siblings of your classmates

* small samples

*Example 2:* create a dotplot of the number of colleges that your classmates are planning to apply to



## 1. Stemplot (aka Stem and Leaf Plot)

*Example 2:* Heights of classmates

60" = 5 ft.

*Example 3:* Babe Ruth's homerun totals each season for the Yankees:

54, 59, 35, 41, 46, 25, 47, 60, 54, 46, 49, 41, 34, 22

*small sets

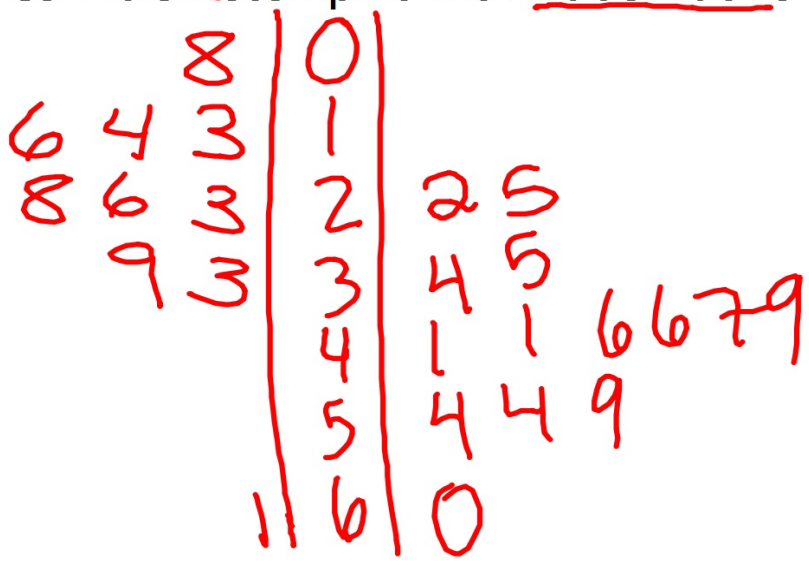
Create a stemplot

| | |
|---|---|
| 2 | 2 5 |
| 3 | 4 5 |
| 4 | 1 1 6 6 7 9 |
| 5 | 4 4 9 |
| 6 | 0 |

*Example 3:* Babe Ruth's homerun totals each season for the Yankees:
54, 59, 35, 41, 46, 25, 47, 60, 54, 46, 49, 41, 34, 22

*Example 4:* Roger Maris' homerun totals for the Yankees:
~~8, 13, 23, 33, 28, 16, 14, 39, 26~~, 61

Create a ~~**Back to Back**~~ Roger Maris stemplot with Babe Ruth's



Example 5: Age guesses

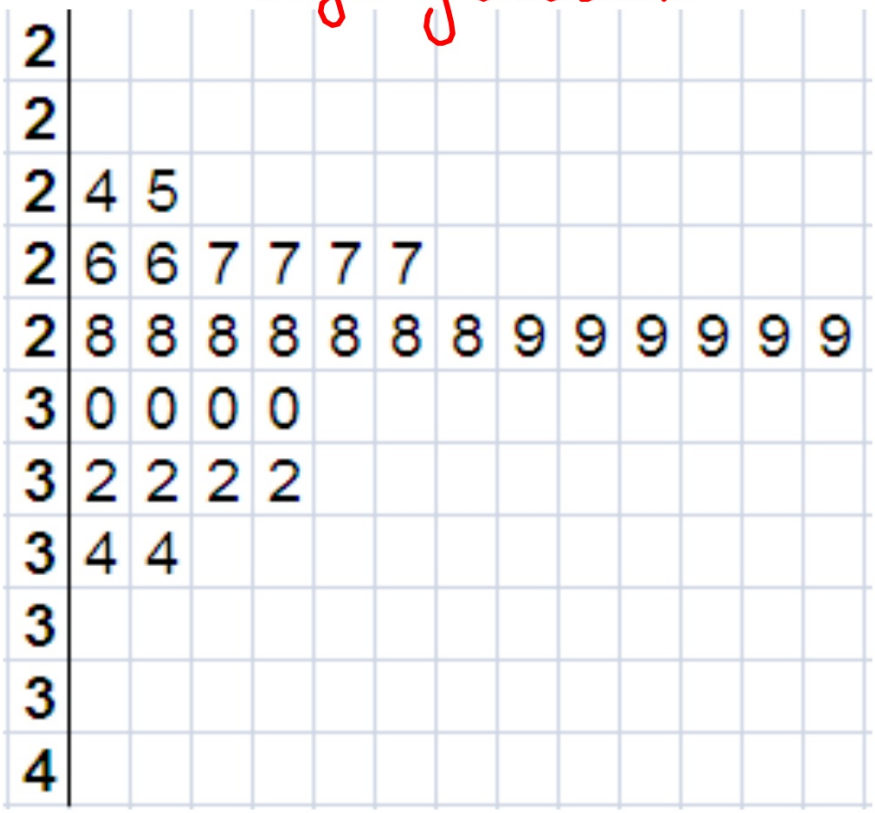
| | |
|---|---|
| 2 | 4 5 6 6 7 7 7 7 8 8 8 8 8 … |
| 3 | 0 0 0 0 2 2 2 2 4 4 |
| 4 | |

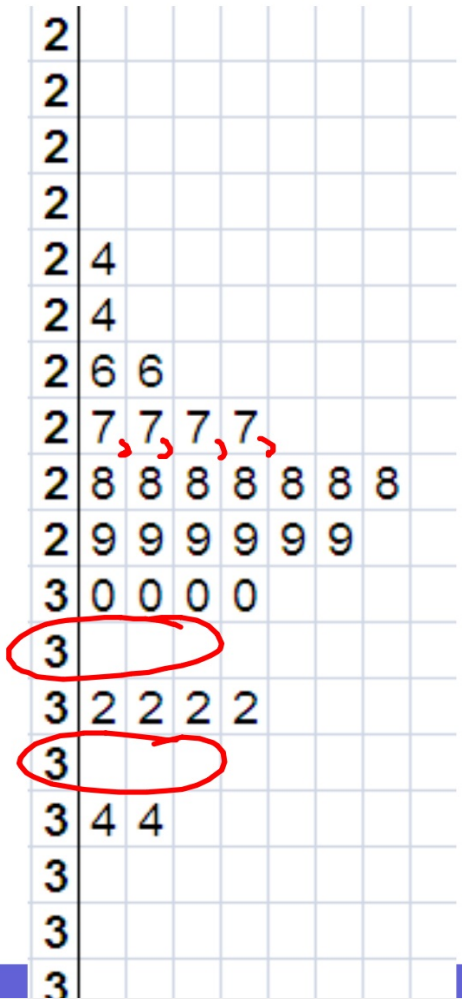
*clustered

Splitting stems

| | |
|---|---|
| 20–24 | 2 4 |
| 25–29 | 2 5 6 6 7 7 7 7 8 8 8 8 8 … |
| | 3 0 0 0 0 2 2 2 2 4 4 |
| | 3 |
| | 4 |
| | 4 |

## Age guesses




2
2
2
2
2 4
2 4
2 6 6
2 7 7 7 7
2 8 8 8 8 8 8 8
2 9 9 9 9 9 9
3 0 0 0 0
3
3 2 2 2 2
3
3 4 4
3
3
3

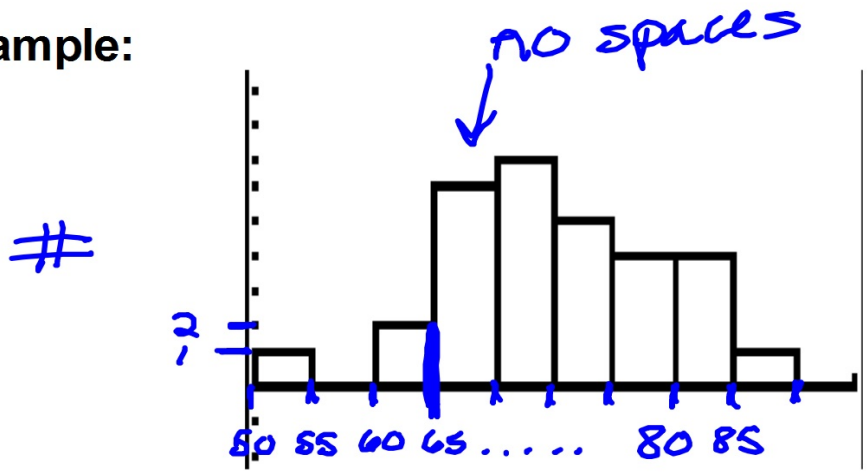
**Complete the worksheet about Inputting, Transferring, and working with lists with a partner**

**When done, come up to the front desk and transfer the following lists to your calculator:**

**GPA**
**INCOM**
**SATMF**
**SATMM**
**TEST**

**Another quantitative distribution: HISTOGRAMS!**

**Example:**




TEST SCORES

65

large samples

**Histograms**

Example: The following are a list of test scores on an exam. Let's create a histogram of these scores

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 40 | 61 | 66 | 68 | 74 | 77 | 84 | 91 |
| 45 | 62 | 66 | 69 | 75 | 78 | 84 | 95 |
| 49 | 64 | 66 | 69 | 76 | 80 | 85 | 96 |
| 51 | 64 | 67 | 70 | 76 | 81 | 85 | 96 |
| 53 | 64 | 67 | 71 | 76 | 81 | 86 | 99 |
| 57 | 64 | 68 | 72 | 76 | 82 | 87 | |
| 59 | 65 | 68 | 72 | 76 | 82 | 90 | |

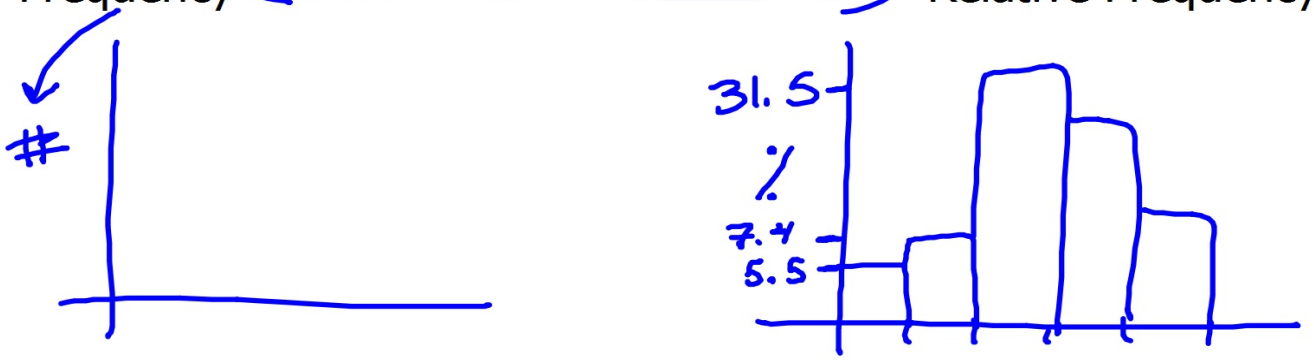
BINS =

Bar

%

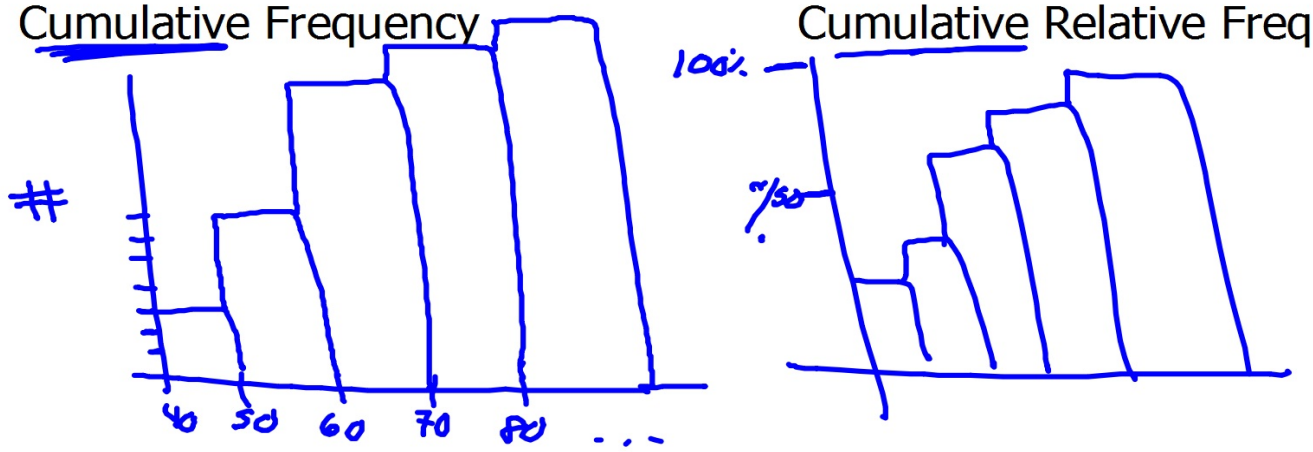
**4 types of histograms:**

Frequency ← same pic. → Relative Frequency




Cumulative Frequency

Cumulative Relative Freq



Using a chart is very helpful when creating the other types of histograms:

| Bin | Frequency | Relative Frequency | Cumulative Frequency * | Cumulative Relative Freq. * |
|---|---|---|---|---|
| 40-50 | 3 | | 3 | |
| 50-60 | 4 | | 7 | |
| | | | . | |
| | | | ⋮ | |
| | | | | |
| | | | | |
| Total: | | | | |

**Histograms on the calculator: see page 46 in the book for help**

**Example using the list TEST from page 1**

**Histogram Examples:**

*Example 1:* Using the class data of AGES IN MONTHS (question 18), create a **frequency** histogram on your paper

*Examples 2:* Using the list INCOM, create a **relative frequency** histogram on your paper

*Example 3:* Using the list GPA, create a **cumulative frequency** histogram on your paper

## Answers to examples:

**DESCRIBING DISTRIBUTIONS: Shape, Center, Spread**

***SHAPE***

**MODE**: UNIMODAL BIMODAL

**SHAPES:** UNIFORM SYMMETRIC

LEFT SKEWED RIGHT SKEWED

**OTHER:** OUTLIERS

GAPS

CLUSTERED

GRANULARITY

***CENTER:***

MEDIAN:

MEAN (average):

***SPREAD:***

RANGE:

**Try these:**

## Complete the worksheet on describing distributions

## Centers, spreads: